

**REMARKS**

Claims 1-8 are pending in this application. By this Amendment, claims 1 and 8 are amended. Support for the amendments can be found, for example, in the specification (see page 3 and page 6, lines 44-51). No new matter is added.

The courtesies extended to Applicant's representative by Examiners Walker and Ryan at the interview held April 27, 2010, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicant's separate record of the interview.

Reconsideration and allowance of the claims are respectfully requested in view of the foregoing amendments and the following remarks.

**I. Rejection Under 35 U.S.C. §112**

The Office Action rejects claims 1-8 under 35 U.S.C. §112, first paragraph. Claims 1 and 8 are amended to obviate the rejection, as discussed during the interview. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**II. Rejection Under 35 U.S.C. §102**

The Office Action rejects claims 1-5, 7 and 8 under 35 U.S.C. §102(b) over WO 02/089244 to Ibrahim et al. ("Ibrahim"). This rejection is respectfully traversed.

Claim 1 recites, *inter alia*, "A fuel cell system comprising...a flow amount controlling unit that controls flow amounts of the fuel gas passing through the first supply passage and the second supply passage, wherein the flow amount controlling unit executes a control for supplying fuel gas to the anode in simultaneous flow from both the first supply passage and the second supply passage and varies a ratio between the flow amounts passing through the first supply passage and the second supply passage when the exhaust passage is closed." (Emphasis added). Claim 8 recites similar features. Ibrahim does not disclose at least the above features of claims 1 and 8.

As discussed during the interview, the fuel cell system of Ibrahim has a controller connected to a 3-way distribution valve that switches it between two positions: (1) a first position in which the first of the two outputs is connected to the input of the valve; and (2) a second position in which a second of the two outputs is connected to the input of the valve. When the distribution valve of Ibrahim is in its first position, fuel is supplied only to the first fuel supply inlet through the fuel flow channel to distribute hydrogen throughout the entire fuel flow channel. Fuel gas is not provided to the second fuel supply inlet in this position. Likewise, when the distribution valve is in its second position, fuel is supplied only to the second fuel supply inlet, and not to the first supply inlet (see Ibrahim, paragraphs [0006] and [0007]). Therefore, the controller of Ibrahim does not execute a control for supplying fuel gas to the anode in simultaneous flow from both the first supply passage and the second supply passage, as recited in claim 1, and similarly in claim 8 with respect to controlling flow amounts.

It is well settled that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. See MPEP §2131. Based on the above, Ibrahim fails to disclose a controller or a method comprising controlling flow amounts, wherein the flow amount controlling unit executes a control for supplying fuel gas to the anode from both the first supply passage and the second supply passage by a simultaneous flow, as recited in claims 1 and 8.

Thus, in view of the foregoing, Ibrahim fails to disclose each and every feature of claims 1 and 8, and, likewise, does not anticipate claims 1 and 8. The remaining claims variously depend from claim 1 and, likewise, are also not anticipated by Ibrahim, for at least the reasons set forth above, as well as for the additional features they recite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**III. Rejections Under 35 U.S.C. §§102/103**

The Office Action rejects claim 6 under 35 U.S.C. §102(b) or, in the alternative, under 35 U.S.C. §103(a) over Ibrahim. These rejections are respectfully traversed.

The above discussion with respect to claim 1 under §102 applies here.

For at least the reasons presented below, Ibrahim does not disclose, and would not have rendered obvious, each and every feature of claim 1. As discussed in detail above, Ibrahim does not disclose each and every feature recited in claim 1. Further, Ibrahim fails to provide any reason or rationale for one of ordinary skill in the art to have modified the system of Ibrahim to have included a flow amount controlling unit that controls flow amounts of the fuel gas passing through the first supply passage and the second supply passage, wherein the flow amount controlling unit executes a control for supplying fuel gas to the anode in simultaneous flow from both the first supply passage and the second supply passage, as recited in claim 1, without the benefit of Applicant's specification.

Specifically, the system of Ibrahim is designed to have alternating flow - meaning that fuel gas is supplied either through the first fuel supply channel in one direction, or through the second fuel supply channel in the opposite direction - but not through both passages at the same time (Ibrahim, paragraph [0007]). This alternating flow design accomplishes the primary objective of Ibrahim, which was to reduce mixture variation between individual fuel cells by reversing the unidirectional flow direction, as discussed, and agreed upon, during the interview (Ibrahim, Abstract and paragraphs [0005] to [0007]). However, an unfortunate but inevitable result of Ibrahim's design is that there will always be a localized concentration of impurities at the downstream end in Ibrahim's cell (see specification, Figure 4A). More specifically, in a system such as Ibrahim's that is designed to have only unidirectional flow (regardless from which direction) - it is extremely difficult to prevent accumulation of

impurities at one end of the fuel cell stack and likewise unable to improve upon the efficiency of fuel usage (see page 10, lines 27-36).

On the other hand, the simultaneous, bidirectional flow characteristics of Applicant's claimed system allow for a significant control of the extreme downstream position, as discussed during the interview (see, e.g. specification page 10, lines 1-8). Thus, by its design, the fuel cell system recited in claim 1 is capable of achieving at least the following advantageous results: (1) effective diffusion of impurities; (2) effective diffusion of dew water; (3) prevention of flooding; (4) prevention of dryout; and (5) a superior improvement in fuel efficiency (see specification, page 9, line 37 to page 10, line 17 and lines 37-49, and Figure 4B). Ibrahim does not disclose how to achieve these results, or even that these results could be achieved by using the simultaneous flow characteristics that are a result of a flow amount controlling unit that controls flow amounts of the fuel gas passing through the first supply passage and the second supply passage, wherein the flow amount controlling unit executes a control for supplying fuel gas to the anode in simultaneous flow from both the first supply passage and the second supply passage, as recited in claim 1, with any reasonable expectation of success.

In view of the foregoing, Ibrahim does not anticipate, nor would Ibrahim have rendered obvious, each and every feature of claim 1. Claim 6 depends from claim 1 and, likewise, is also not anticipated and would not have been rendered obvious by Ibrahim, for at least the reasons set forth above, as well as for the additional features it recites.

Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

**IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-8 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:  
Request for Continued Examination

Date: May 21, 2010

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